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Editorial.—MR. JOSEPH F. JAMES has written a pleasant memoir of Chas. Darwin, which has been published in the Journal of the Cin. Soc. Nat. Hist.

REV. A. B. HERVEY sends word of the death of Dr. G. Dickie, F. L. S., of Aberdeen, Scotland, a well known British Algologist, which occurred July 15th.

MR A. C. PALMER, in the *Am. Monthly Micr. Jour.*, calls attention to the fact that *Naias flexilis* furnishes a fine illustration of cyclosis, even better than the stock examples, *Vallisneria* and *Anacharis*.

A CORRESPONDENT, referring to Mr. Arthur's note on page 88 of the last GAZETTE asks: "Is Mr. Arthur quite sure that rats, or other vermin, had not carried the crab apples under the stone and left the seeds?"

F. REINITZER propounds the theory that transpiration is an injurious agent, a necessary evil, in the life of the plant. This view he founds on the fact that transpiration exercises a retarding influence on growth.

M. ALPH. DECANDOLLE has just distributed a small pamphlet containing two papers; the first "Sur un Caractere de la Batate," and the other "Observation de M. Meehan sur la Variabilite du Chene Rouvre (*Quercus Robur*) et Remarque de M. Alph. DeCandolle."

REV. E. L. GREENE, in the *Torrey Bulletin* for September, describes seven new Californian *Composite*, four of which belong to the genus *Hemizonia*. Mr. Greene is coming rapidly to the front as a publisher of new species and his work among our western plants has been invaluable.

KARL RICHTER has determined that the substance of the cell-wall of Fungi fails to display the ordinary reactions of cellulose because of the intimate mixture of the cellulose with a foreign substance which he eliminated by treating for a prolonged period with potash and washing with a weak acid, after which the blue coloring with chloriodide of zinc is obtained.

THE "CUCUMBER ODOR" of the water which has been troubling Boston so much, has been traced to the presence, not of plants,

but of a fresh water sponge. The Nostocs must still stand responsible for the "pig-pen" odor, but the "cucumber odor" we hand over to zoologists.

MR. FOERSTE, of Dayton, Ohio, writes that he has received a postal card from Mr. Wm. Trelease saying: "I have noticed protogyny in *Thaspium aureum* and *Sanicula*, so I no longer have any doubt as to the accuracy of your observations on *Erigenia*, though the fact of this sort of dichogamy occurring in *Umbelliferae* was entirely unexpected from the uniformity of protandry in the earlier studied genera.

THE PROCEEDINGS of the Davenport Acad. of Nat. Sci., Vol. III, Part II, are at hand. The botanical articles are by Prof. J. C. Arthur and Dr. C. C. Parry. The former makes still farther addition to his catalogue of Iowa Plants; while the latter describes two new species of *Oxytheca* from Southern California. The new species are named *O. caryophylloides* and *O. Parishii* and were both discovered by the brothers Parish in the San Bernardino Mountains.

ON PAGE 78 of the July GAZETTE it might be inferred that Baillon's work among the *Compositae* was thought more commendable than even that of Mr. Bentham. No reader of the GAZETTE should labor under such a delusion. Because Mr. Bentham with immense labor has worked up the vast order and acknowledged 780 genera, and Baillon, putting a good part of the genera shown to be near into one, reduces the number to 403, is no indication that the work of the latter is either "philosophical or practically convenient," for it is very easy work to do.

PROF. HENRY G. JESUP, of Dartmouth College, has published a very handsome pamphlet entitled "Flora and Fauna of Hanover, N. H." The list of plants includes the flowering plants and higher cryptogams, just such as are included in Gray's Manual. The range includes the flora within thirty miles radius of the town of Hanover and contains a great diversity of conditions, such as mountain peaks, valleys, and lakes, and, as is to be expected, the list is an exceptionally rich one. The summary shows a total of 1008 species, of which 286 are *Polypetalae*, 265 *Gamopetalae*, 96 *Apetalae*, 52 Cryptogams Introduced phænogams number 144.

MR. J. M. MACFARLANE, Demonstrator of Botany in the University of Edinburg, finds a new factor in the vegetable cell, which he proposes to call the *nucleolo-nucleus*. It is a well marked body inside the nucleus, round or slightly oval in outline, and exhibits a clear bounding wall differentiating it from the substance of the nucleolus. It was first seen in the epidermal cells of *Ornithogalum pyramidale*, after staining fresh epidermis with a $\frac{1}{4}$ per cent. solution of eosin in common methylated spirit, and was afterwards found in many other Phanerogams and also in some Cryptogams. Mr. Macfarlane concludes that the nucleus, nucleolus and nucleolo-nucleus are invariably present, *if the cell is still active*.

PROF. J. C. ARTHUR reports a very successful session of the Summer School at the University of Minnesota. There were forty students at work in the botanical laboratory and all were enthusiastic, as might be expected. For the benefit of botanists who suppose that some distant locality furnishes better illustrations for study than home plants, and who so often connect the lower forms with something distant and unattainable, we quote the following from Prof. Arthur's private letter:

"We found *Chara* wherever we went. There was an equal profusion of *Nostocs*, and *Desmids*. *Nitella*, *Vaucheria*, *Volvox*, *Hydrodictyon* and *Mesocarpus* were specially abundant. Numerous large and handsome slime-moulds were found on the side-walks, and we were also able to study every stage of the polymorphous *Puccinia*, even to the germination of the teleutospores."

THE CURRENT "PART" of the Proceedings of the Philad. Acad. Sci. contains two papers of botanical interest, both by Mr. Thos. Meehan, whose restless eyes and pen are ever observing and recording. In one of them is recorded the fact that *Salisburya adiantifolia* is sometimes hermaphrodite; while in the other, which is a much more formal paper, are recorded some observations on the relation of heat to the sexes of flowers, based chiefly on a study of the maple and which concludes with the following generalizations:

Male flowers do not appear on female maple trees till some of its vital power has become exhausted.

Branch-buds bearing female flowers have vital power sufficient to develop into branches.

Branch-buds bearing male flowers have not vital power enough to develop into branches, but remain as spurs which ever after produce male flowers only.

Buds producing male flowers only are more excited by heat than females, and expand at a low temperature, under which the females remain quiescent.

PROF. H. BAILLON, wishing to germinate some seeds of walnut and almond trees in winter, thought to obtain a more rapid development in a warm house in which the temperature varied during the twenty-four hours from 15° to 25° (59-77 F.) than in a cool house in which the daily variation was between 5° and 15° (41-59 F.), but the trial failed. In the cool house in the course of six weeks the walnuts had stems of about two decimeters in height, while the most advanced in the warm house had stems of only two or three centimeters. At the end of two months and a half the seeds growing in the warm house had roots only occasionally well-developed, but little or no caulome outside the fruit. When walnuts were germinated in a warm house with "bottom heat" the tap roots were early arrested in their development though growing in a very friable soil consisting of moist sawdust; whereas when germinated in a cool house, without bottom heat, the tap roots grow well in length before the egress of the plumule. The same results were obtained

with almonds, thus seeming to show that with some seeds nothing is to be gained by forcing them.

PROF. EMERSON REYNOLDS, F. R. S., has lately shown that well-marked differences in physiological activity between metameric bodies of comparatively simple constitution can be detected with aid of plants. Ammonium sulphocyanate and its metamer, theocarbamide, both compounds rich in nitrogen and easily soluble in water, were selected for experiments during the summer of 1882 upon plants of *Nicotiana longiflora*. From August to the end of November a certain number of plants were watered with rain water, and a certain number with the compounds in solution. The following table shows the chief results:

	Rain-water.	Theocarbamide.	Sulphocyanate.
Total height in inches.....	31	23	12
No. of leaves.....	15	14	13
Maximum length of lvs.....	9.5	15.25	8
Maximum breadth of lvs.....	4.25	6	2.5
No. seed pods.....	9	15	0
Ditto well-developed....	1	11	0

It would thus seem that the particular elements of which a body is composed exert less influence on its physiological activity than the method in which the component atoms are grouped.

Some New Grasses.—*MUHLENBERGIA SETIFOLIA*.—Culms erect, 1½ to 2 ft. high; radical leaves numerous, 4 to 6 inches long, setaceous, involute, recurved at the tips, those of the culm 2 or 3 and similar; stipules membranaceous, acute; sheaths 4 to 6 inches long, smooth; panicle 4 to 5 inches long, narrow, erect, branches of panicle erect, filiform, in twos or threes, about 1 inch long, once or twice dividing near the base and each with 2 to 4 flowers mostly on short filiform pedicels; outer glumes minute, less than one line long, oblong, obtuse, scarious, erosely toothed at the apex; flowering glume 2 lines long, with a short thick callus, obscurely 3-nerved, smooth, lanceolate, acuminate, terminated with a slender awn twice or thrice its own length; palet of same texture and nearly equal length, 3-nerved.

Collected on the Gaudalupe Mountains of Western Texas by *Dr. V. Havard*, of the U. S. Army.

MUHLENBERGIA GLOMERATA, var. *BREVIFOLIA*.—Culms 1½ to 2 ft. high, erect and leafy, leaves (5-8 on each culm) rigid, short and wide (2-4 inches long, 2-3 lines wide), somewhat scabrous; panicle spikelike, interrupted and with longer branches below; glumes and palets about equal in length (1 line), glumes acuminate, scabrous-puberulent; flowering glume acuminate and tipped with an awn half its length or less, 3-nerved, pubescent below; palet acute, about equaling the flowering glume.

Collected in S. E. California by *Mr. S. B. Parish*.

MUHLENBERGIA SYLVATICA, var. *CALIFORNICA*.—This grass has the spreading, diffusely branched habit of *M. sylvatica*, and should probably be ranked as a marked variety of that species.

The narrow panicles terminate the long, leafy, terminal and lateral branches, are 4 to 6 inches long, the rays mostly alternate, the lower ones distant and subspiculate, some of them 1 inch long, the spikelets sessile and crowded on the branches; the outer glumes membranaceous, except the hispid green keel, equal, lanceolate, acuminate, scarcely 2 lines long, rather exceeding the flowering glume without its awn; flowering glume about $1\frac{1}{2}$ lines long, firm, finely scabrous, acute, and terminating in a straight awn about its own length, sparingly villose at the base; palea about as long as its glume, acute.

Collected on the San Bernardino Mts., California, by *Mr. S. B. Parish*.

Notula Californica.—The fact has hitherto been strangely overlooked by Californian botanists, or at least, it has been mentioned by no one, that the most common *Convolvulus* of California has the character of an evergreen shrub, often ascending trees to the height of twenty feet, and showing great lengths of woody, grape-vine like stems frequently near an inch in diameter. The species is *C. occidentalis*, Gray, supposed by that author to be an herb like *C. sepium*, L. to which it is, in floral character, closely related. The young plants are indeed wholly herbaceous, and when only these are seen, trailing over the ground, or supported on low bushes and flowering profusely, it may easily pass for a mere herb. I have admired almost daily for a year past a beautiful specimen which grows by a brookside in the midst of the village of Berkeley, and only very recently did it occur to me as singular that a *Convolvulus* so much like common bind-weed should be displaying its festoons of leaf and flower from only the very topmost branches of a tree twelve or fifteen feet high, and that during the whole year. The examination thus suggested to my mind brought to light the dark-barked, lithe and tortuous woody stems which, in no wise attached to the trunk of the tree, rose from the ground directly up to the lower branches, after the manner of wild grape-vines; and this, now that my attention has been called to the fact, I find to be the universal habit of the species, except in the case of plants only two or three years from the seed. The most luxuriant growth of this plant which I have met with is on Goat Island in San Francisco Bay.

On the northern slope of this mountain island is an extensive grove of live oak (*Quercus agrifolia*) of rather small size; but many of these trees have their crowns completely and beautifully mantled, so that their own foliage is hidden, by the masses of the shrubby morning-glory whose corollas are here, as I have seen